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BUREAU OF EDUCATION.

REPORT

OF

INDUSTRIAL EXHIBITS

OF THE

PHILIPPINES SCHOOLS

AT THE

LOUISIANA PURCHASE EXPOSITION.

MANILA:
BUREAU OF PUBLIC PRINTING.
1904.

18271

LETTER OF SUBMITTAL.

Philippine Exposition Board,
Educational Exhibits,
St. Louis, February 29, 1904.

Sir: I have the honor to submit the following report of Philippine school exhibits for the Louisiana Purchase Exposition, made with special reference to the industrial exhibits.

Very respectfully,

A. R. Hager,
In Charge of Educational Exhibit.

Dr. David P. Barrows,
General Superintendent of Education, Manila, P. I.

REPORT OF INDUSTRIAL EXHIBITS OF THE PHILIPPINES SCHOOLS AT THE LOUISIANA PURCHASE EXPOSITION.

INTRODUCTION.

The present report covers all educational exhibits entered in catalogue up to December 5, the date when the work in Manila ceased. A considerable number of promised exhibits have not yet been received—e. g., the work of the kindergartens. At present the kindergarten classification, Group I, class 1, has no entries, but an exhibit has been promised by the superintendent of kindergartens to be mailed early in the year 1904. At the time the Board left Manila the kindergartens had been recently organized and were not prepared to exhibit their work. Industrial exhibits have also been promised from the Manila Trade School, whose exhibit to date includes only drawings.

It is hoped and expected that additional exhibits will be received by mail from many schools, the Bureau of Education having kindly agreed to forward all such contributions from Manila to St. Louis.

The following is a general summary of exhibits received and catalogued:

General summary of exhibits, Educational Department.

School division.	Total number of exhibits.	Industrial exhibits.	Secondary school exhibits.
Abra	41	-----	-----
Albay and Sorsogon	50	13	17
Antique	8	-----	-----
Batangas	284	169	118
Benguet	63	-----	-----
Bohol	53	4	17
Bulacan	401	164	35
Cagayan	228	52	35
Camarines	258	6	37
Capiz	73	-----	21
Cavite	271	63	5
Cebu	523	230	115
Ilocos Norte	46	21	24
Ilocos Sur	326	34	54
Iloilo	172	2	87
Jolo	9	9	-----
Laguna	554	379	435
Leyte	12	-----	12

General summary of exhibits, Educational Department—Continued.

School division.	Total number of exhibits.	Industrial exhibits.	Secondary school exhibits.
Manila	1,777	56	586
Masbate	100	52	39
Mindanao	393	337	
Mindoro	13		
Misamis	63		4
Nueva Ecija	70		28
Occidental Negros	496	281	117
Oriental Negros	30	5	8
Pampanga and Bataan	262	86	2
Pangasinan	443	298	64
Paragua	10		
Rizal	187	63	22
Romblon	19		
Samar	17	1	
Surigao	37		8
Tarlac	96	26	6
Tayabas	198	9	75
Union	285	131	6
Zambales	108	3	18
Book publishers	62		
Total	8,637	2,494	1,409

The foregoing summary shows the total number of exhibits, the number of industrial exhibits, and the number of secondary-school exhibits from each division. The first column includes the second and third, and the items listed as secondary-school exhibits, if industrial work, are shown also in the second column.

In order of size of total exhibits the five leading divisions stand in the following order: Manila, Laguna, Cebú, Occidental Negros, and Bulacan.

In order of size of industrial exhibits the five leading divisions are Laguna, Mindanao, Pangasinan, Occidental Negros, and Cebú.

In the Exposition classification all drawings are placed in a class by themselves, and industrial exhibits include such manual-training products as are listed in the summary of industrial work—e. g., needlework, wood carving, basket work, etc.

PRIVATE SCHOOLS.

The University of Santo Tomas, the Liceo, the Instituto de Mujeres, the Colegio de San Francisco Javier, and the Colegio Filipino have all furnished collections of their work, and these constitute the greater part of the Manila exhibit. The Colegio de San José, of Tacloban, sends the only exhibit received from Leyte, a collection of photographic views of the school.

Following is a summary of industrial exhibits, by divisions.

This shows the number and character of industrial exhibits from each school in the division which has sent work of this nature:

SUMMARY OF INDUSTRIAL EXHIBITS, BY DIVISIONS.

ALBAY AND SORSOGON.

Tabaco.—Elementary grades (13 exhibits): Needlework, with explanatory sheet; toys.

BATANGAS.

Batangas.—Elementary grades (56 exhibits): Baskets; traps; charts showing steps in basket work and uses of hemp.

Lipa.—Elementary grades (94 exhibits): Models of apparatus for preparing and weaving abaca; baskets; hats; dolls' clothing; native styles; embroidery; pottery; woodwork; toys; models of agricultural implements, furniture, etc. Secondary school (19 exhibits): Models of apparatus used in working hemp fiber; samples of fabrics; charts explaining industries.

BOHOL.

Tagbilaran.—Secondary school (4 exhibits): Needlework, embroidery, and drawn work.

BULACAN.

Baliuag.—Elementary grades (112 exhibits): Hats, small size; baskets; mats; pottery; toys; models of agricultural implements, furniture, etc. Secondary school (3 exhibits): Hats, showing stages of manufacture; silk fabrics.

Bustos.—Elementary grades (4 exhibits): Wood carving; basket work.

Hagonoy.—Elementary grades (22 exhibits): Dresses, model, in native style; embroidery, showing cushions used in making; woodwork.

Meycauayan.—Elementary grades (22 exhibits): Basket work; toys; embroidery; models of agricultural implements, furniture, etc.

San Miguel de Mayumo.—Elementary grades (1 exhibit): Needlework.

CAGAYAN.

Ignig.—Elementary grades (1 exhibit): Toy.

Tuguegarao.—Elementary grades (49 exhibits): Basket work;

models of agricultural implements; hats; needlework; toys; net making, etc. Secondary school (2 exhibits): Basket work.

CAMARINES.

Indan.—Elementary grades (6 exhibits): Hats; embroidery; models of agricultural implements.

CAVITE.

Corregidor.—Elementary grades (2 exhibits): Toys.

Indang.—Elementary grades (1 exhibit): Palm-leaf book bag.

Rosario.—Elementary grades (56 exhibits): Toys; preserved fruits; basket work; pottery; model school benches; model of rice mill; needlework; products of school garden; models of schoolhouses built by pupils.

Santa Cruz.—Elementary grades (4 exhibits): Toys.

CEBU.

Argao.—Elementary grades (58 exhibits): Models of agricultural implements, furniture, and boats; toys; needlework; embroidery, and doll clothing; basket work; mats; network; model of house, etc.

Barili.—Elementary grades (3 exhibits): Paper folding; artificial flowers.

Cebu.—Elementary grades (75 exhibits): Toys; pottery; hats; weaving; needlework; basket work; paper cutting; bamboo utensils; artificial flowers; models of house and furniture. Secondary school (23 exhibits): Toys; musical instruments; models of agricultural implements and furniture; fabrics; baskets; model of Filipino house.

Dalaguete.—Elementary grades (66 exhibits): Pottery; hats; toys; baskets; traps; models of weapons; bamboo utensils, etc.

Opon (Mactan).—Elementary grades (5 exhibits): Toys; network, etc.

ILOCOS NORTE.

Badoc.—Elementary grades (2 exhibits): Needlework.

Laoag.—Secondary school (17 exhibits): Wood carving; artificial flowers; models of clothing; mats, etc.

San Nicolas.—Elementary grades (2 exhibits): Needlework.

ILOCOS SUR AND ABRA.

Santa Maria.—Elementary grades (32 exhibits): Paper folding; toys; baskets; mats; cloth weaving; models of furniture, etc.

Vigan.—Secondary school (2 exhibits): Needlework; doll clothing.

ILOILO.

Iloilo.—Secondary school (2 exhibits): Map modeling in papier-maché.

JOLO.

Buz Buz.—Industrial school (9 exhibits): Models of household implements; network; traps; model of Moro house.

LAGUNA.

Santa Cruz.—Elementary grades (1 exhibit): Needlework. Secondary school (378 exhibits): Sloyd models, in series; decorative carving; wood turning; models of agricultural implements and boats, house and school furniture; traps; toys; baskets; needlework, embroidery, drawn work, etc.; tools used in manual training; model of Filipino house.

MANILA.

Binondo (Secondary Girls').—Elementary grades (1 exhibit): Needlework.

Ermita (Girls').—Elementary grades (7 exhibits): Needlework, embroidery and drawn work.

Filipino College.—Secondary school (5 exhibits): Clay modeling; metal work.

Gagalañgin.—Elementary grades (15 exhibits): Needlework; modeling, casts of clay, models of fruit, leaves, etc.

Instituto de Mujeres.—Secondary school (7 exhibits): Needlework, embroidery, drawn work, etc.; artificial flowers; paper cutting.

Liceo, El.—Elementary grades (6 exhibits): Paper cutting and weaving. Secondary school (6 exhibits): Relief map modeling; herbaria.

Nautical School.—Secondary school (5 exhibits): Knots.

San Miguel (Girls').—Elementary grades (4 exhibits): Needlework.

MASBATE.

San Fernando (*Ticao*).—Elementary grades (52 exhibits): Clay modeling; basket work.

MINDANAO.

Zamboanga.—Industrial school (337 exhibits): Needlework, embroidery, drawn work, crochet work, clothing, etc.; basket work; cloth weaving; plaiting and weaving of buri; Pandan and Sinabatan fibers; mats; dyeing; cord and rope making; net making; wood carving; bead work; hats; models of furniture and boats; toys; tools used in work, etc.

OCCIDENTAL NEGROS.

Bacolod.—Secondary school (71 exhibits): Needlework, embroidery, etc.; pottery; models of furniture and agricultural implements; bead work; baskets; net work; traps; toys; models of looms; hats; mats; etc.

Bago.—Elementary grades (51 exhibits): Basket work; traps; models of agricultural implements; toys; model of schoolhouse.

Cabancalan.—Elementary grades (11 exhibits): Needlework, embroidery, and lace work.

Ginigaran.—Elementary grades (33 exhibits): Needlework; necklaces of pith, colored; artificial flowers; models of agricultural implements and apparatus for spinning and weaving; hats.

Ilog.—Elementary grades (27 exhibits): Needlework, samplers, embroidery, and drawn work.

Maao.—Elementary grades (85 exhibits): Models of agricultural implements; toys; hats; basket work; traps; needlework; shell work; bead work with seeds; model of schoolhouse.

Pulipandan.—Elementary grades (2 exhibits): Hat; model of house.

Sumag.—Elementary grades (1 exhibit): Needlework.

ORIENTAL NEGROS.

Dumaguete.—Elementary grades (3 exhibits): Needlework; fish net. Night school (2 exhibits): Wood carving; needlework.

PAMPANGA AND BATAAN.

Apalit.—Elementary grades (4 exhibits): Baskets; cut-paper work; model of schoolhouse.

Bacolor.—Elementary grades (1 exhibit): Painted screen.

Betis.—Elementary grades (3 exhibits): Needlework; models of dresses.

Floridablanca.—Elementary grades (3 exhibits): Models of agricultural implements.

Macabebe.—Elementary grades (2 exhibits): Papier-mache modeling.

Mexico.—Elementary grades (49 exhibits): Needlework; models of clothing; models of agricultural implements, furniture, and boats; toys; weapons; traps, etc.

Porac.—Elementary grades (23 exhibits): Models of agricultural implements and furniture; mats; baskets; forms of food preparations; traps; pottery, etc.

Santa Ana.—Elementary grades (1 exhibit): Model of schoolhouse.

PANGASINAN.

Binmaley.—Elementary grades (89 exhibits): Basket work; pottery; hats; traps; mats; boats; models of agricultural implements and furniture; needlework; toys.

Dagupan.—Elementry grades (182 exhibits): Models of agricultural implements, tools, wearing apparel, weaving apparatus, furniture, boats, and musical instruments; wood carving; basketwork; hats; network; traps; pottery; toys; needlework; mats; model of house.

San Carlos.—Elementary grades (27 exhibits): Models of agricultural implements and furniture; baskets; traps.

RIZAL.

Pasay.—Elementary grades (23 exhibits): Models of agricultural implements, furniture, and tools; baskets; traps.

Pasig.—Secondary school (9 exhibits): Models of household utensils and furniture; toys.

San Juan del Monte.—Elementary grades (1 exhibit): Toy.

San Mateo.—Elementary grades (18 exhibits): Needlework; articles of clothing.

Tanay.—Elementary grades (9 exhibits): Mats.

SAMAR.

Laguan.—Elementary grades (1 exhibit): Model of church.

TARLAC.

San Isidro.—Elementary grades (7 exhibits): Models of agricultural implements; toys; traps.

Tarlac.—Elementary grades (19 exhibits): Models of agricultural implements; weapons; trap; toy.

TAYABAS.

Lopez.—Elementary grades (9 exhibits): Hats; mat; cloth weaving; needlework.

UNION.

Agoo.—Elementary grades (2 exhibits): Needlework.

Balaoam.—Elementary grades (34 exhibits): Models of agricultural implements and furniture; toys; musical instruments; needlework, clothing, and embroidery; basket work; artificial flowers; pottery, etc.

Bangar.—Elemetary grades (20 exhibits): Models of agricultural implements; toys; hat; pottery; needlework; artificial flowers.

Cava.—Elementary grades (41 exhibits): Basket work; network; pottery; hats; toys; models of furniture; needlework.

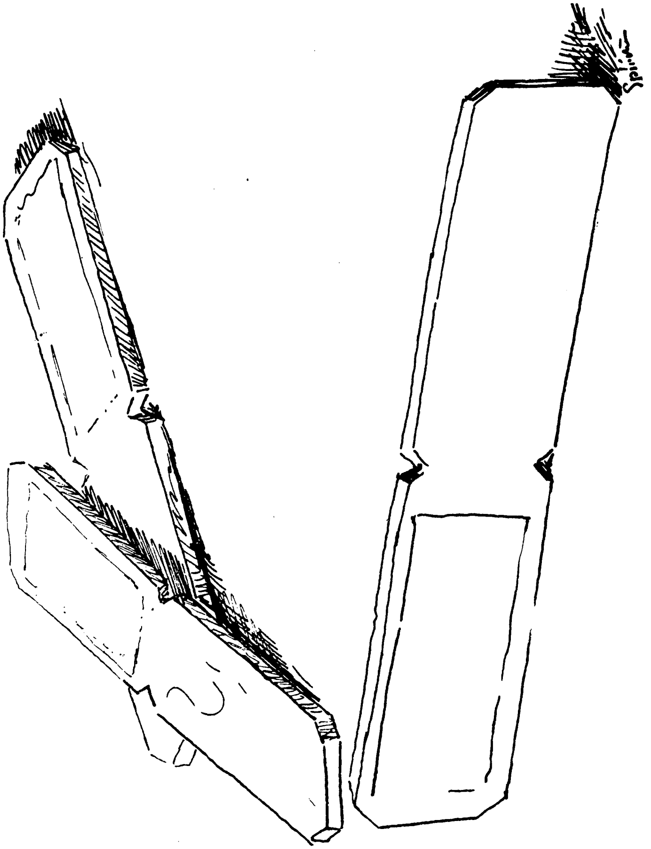
Namacpacan.—Elementary grades (30 exhibits): Traps; models of agricultural implements and spinning and weaving apparatus; network; pottery; basket work; musical instruments.

San Fernando.—Elementary grades (3 exhibits): Book bags of palm leaf.

Santo Tomas.—Elementary grades (1 exhibit): Basket.

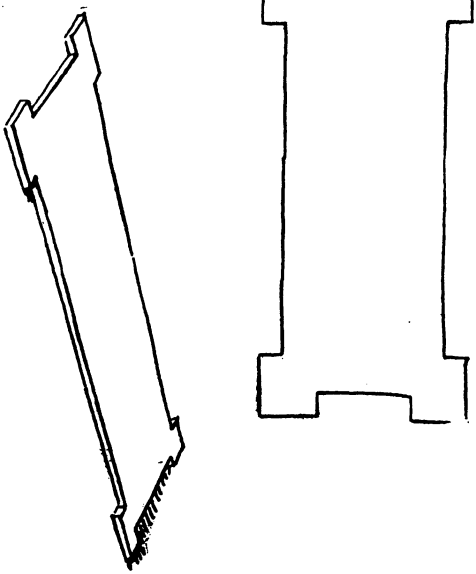
ZAMBALES.

Alaminos.—Elementary grades (3 exhibits): Frames for photos.

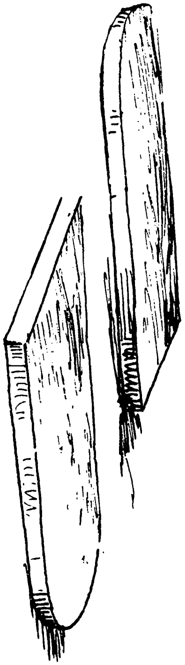


PENCIL SHARPENER.

(Class exercise in manual training from the Laguna High School.)

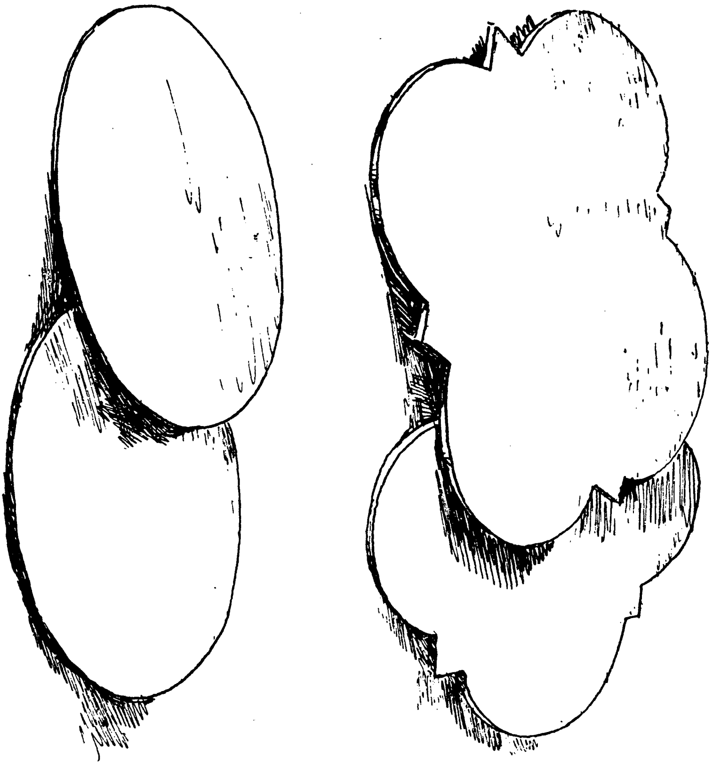


TWINE REEL.



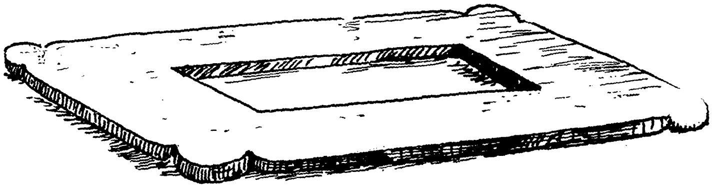
GARDEN SEED MARKERS.

(Class exercises in manual training from the Laguna High School.)



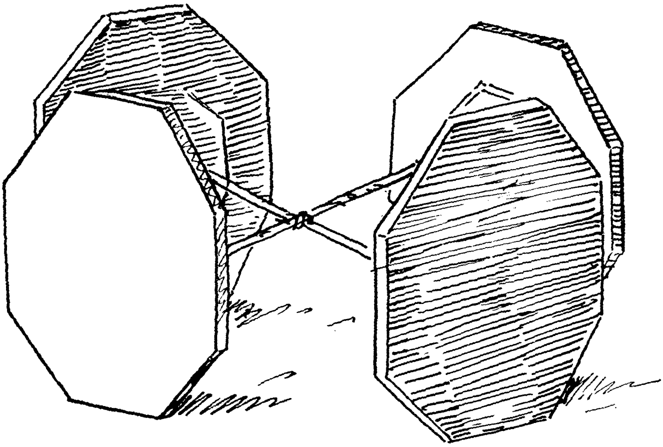
DISCS. ORNAMENTAL GEOMETRICAL DESIGNS.

(Class exercises in manual training from the Laguna High School.)



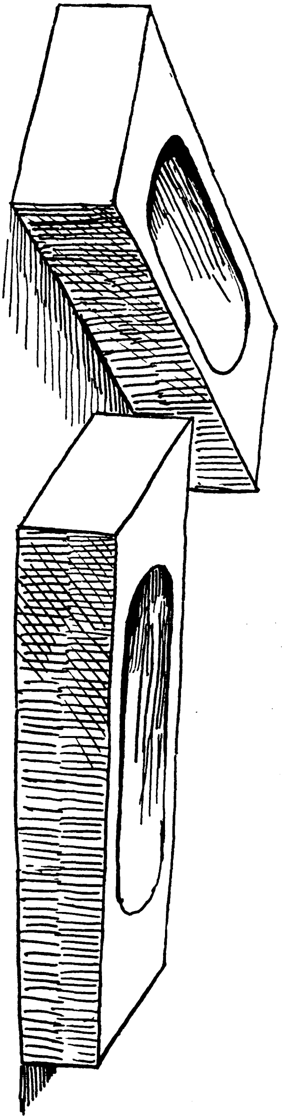
FRAME.

(Class exercises in manual training from the Laguna High School.)



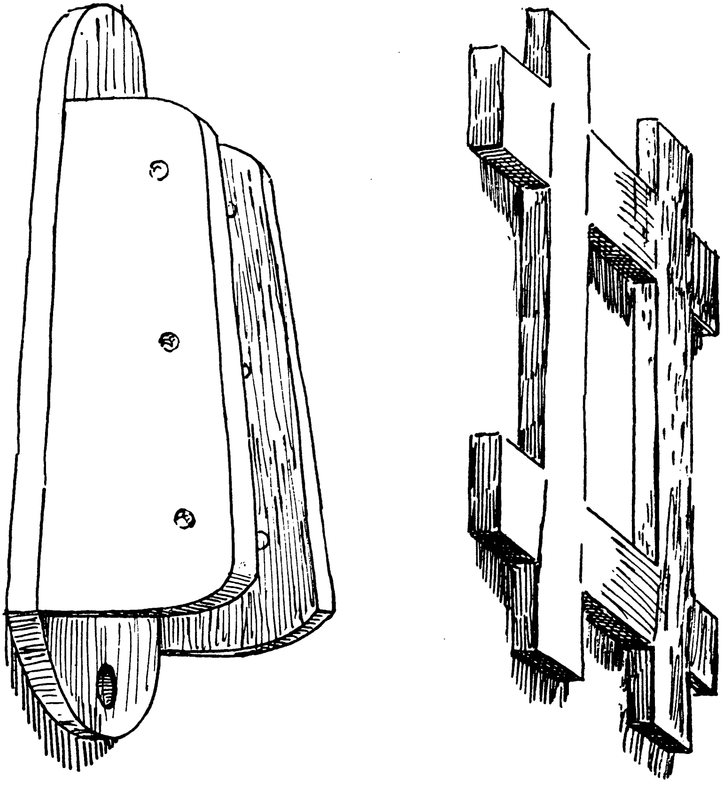
LETTER FILES.

(Class exercises in manual training from the Laguna High School.)



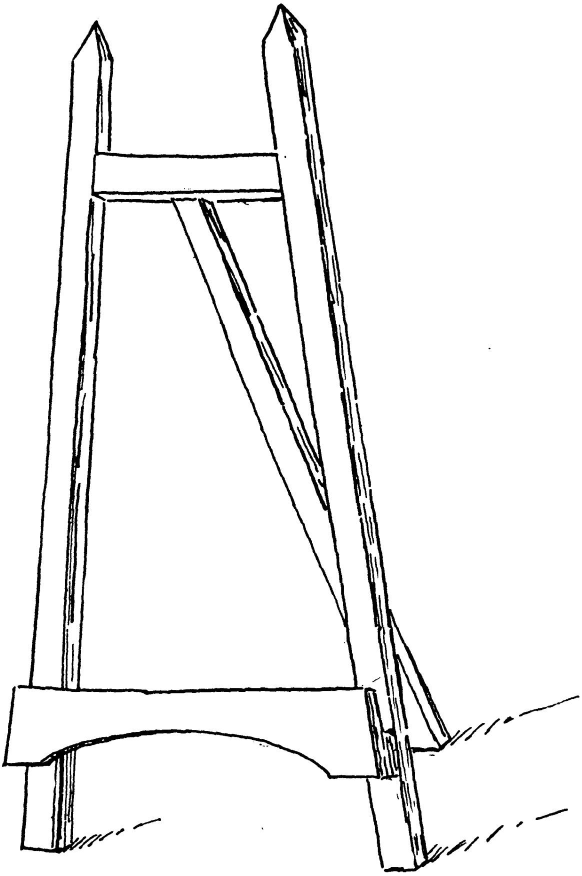
PEN TRAY.

(Class exercise in manual training from the Laguna High School.)



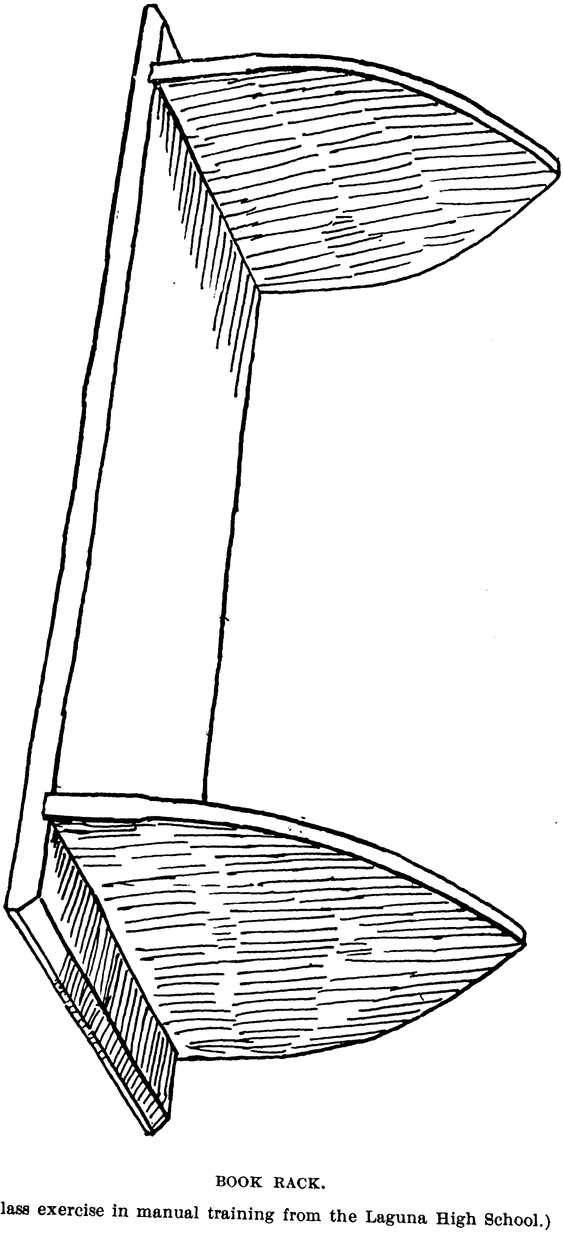
SPOOL HOLDER. **FRAME.**

(Class exercises in manual training from the Laguna High School.)



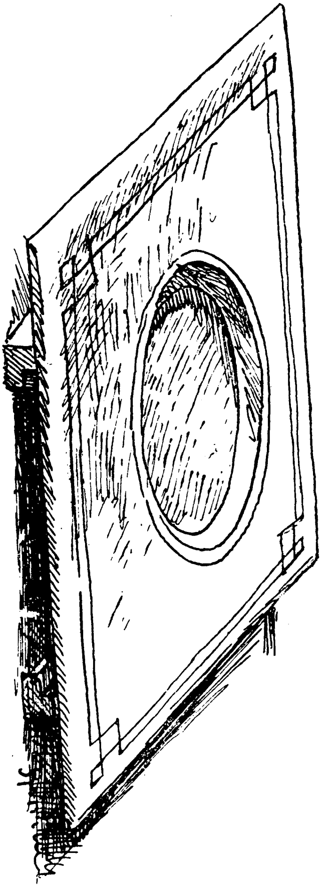
EASEL.

(Class exercise in manual training from the Laguna High School.)



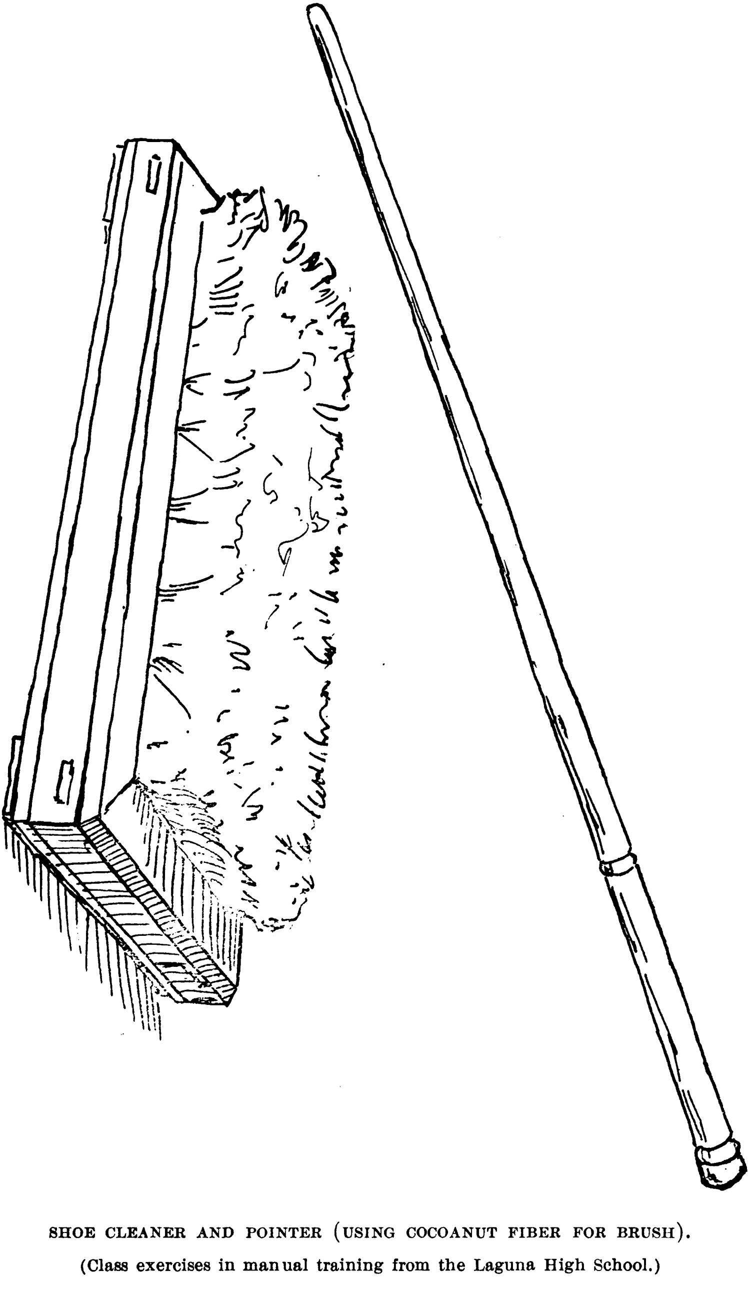
BOOK RACK.

(Class exercise in manual training from the Laguna High School.)



FRAME.

(Class exercise in manual training from the Laguna High School.)



SHOE CLEANER AND POINTER (USING COCOANUT FIBER FOR BRUSH).

(Class exercises in manual training from the Laguna High School.)

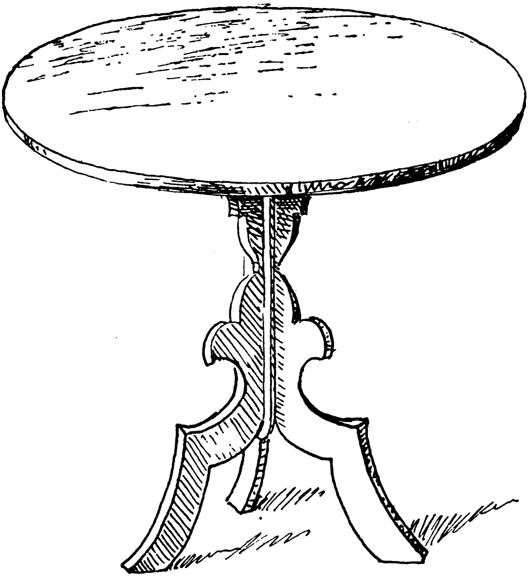
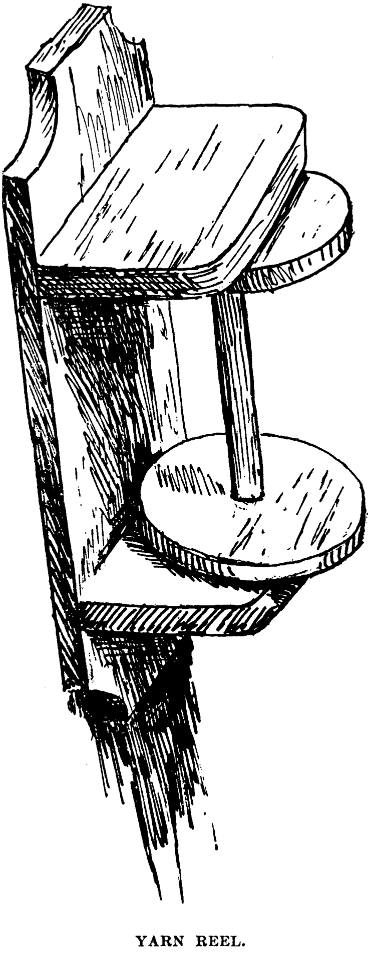


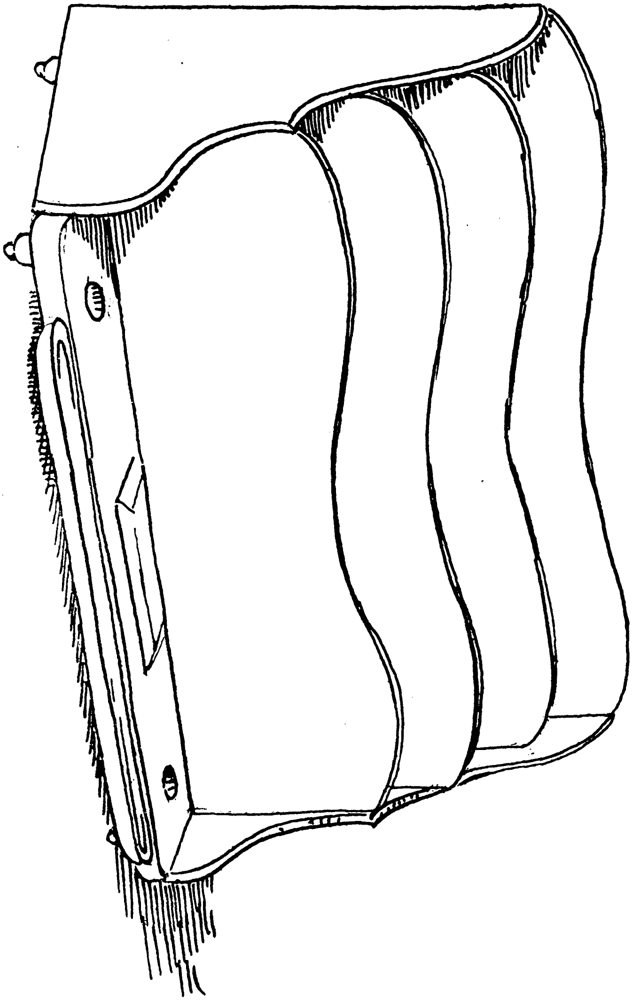
TABLE.

(Class exercise in manual training from the Laguna High School.)



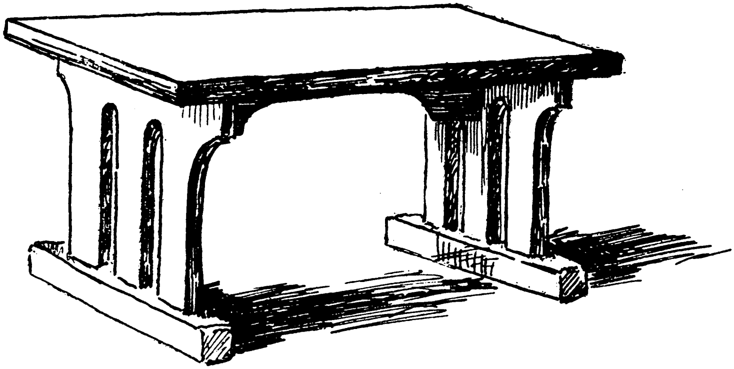
YARN REEL.

(Class exercise in manual training from the Laguna High School.)



STATIONERY RACK.

(Class exercise in manual training from the Laguna High School.)



FILIPINO TABLE.

(Class exercise in manual training from the Laguna High School.)

While all of the industrial exhibits listed in the foregoing summary are interesting, there are many having features of particular. interest, a description of which may be useful in suggesting lines and methods of work to schools in which industrial work is to be developed. The comments that follow are therefore made with regard to their suggestive value to other schools rather than to their excellence as Exposition material.

LAGUNA.

Of the 554 exhibits received from Laguna division 435 are from the high school, and of these 379 are industrial. A large part of the exhibit consists of graded exercises in manual training. The number of exhibits given above includes duplicates of these exercises.

At the time an exhibit was requested from the Laguna High School the industrial work had hardly been fairly started, but the request met with a hearty response. The exhibit sent displayed adaptation of available means and an application of correct principles that almost any school in the Philippines whose teacher has an intelligent interest in this branch of work may duplicate.

A native (Tagalog) carpenter, with a limited knowledge of English, was secured from a neighboring pueblo. He was a bright young man, a fair carpenter, and understood how to read a simple working drawing. He was deft in the use of tools and knew how to keep them in good working order. The fact that he had some skill in wood carving in addition to cabinetmaking, while a very desirable qualification, is nonessential from the view point of this exhibit, which consists almost exclusively of the simple work of ordinary bench tools.

The first thing done was to prepare a series of graded exercises in woodwork. This was done by the principal of the school, who made drawings patterned after a manual-training outline that he obtained from an American school. For a number of the more advanced exercises there were substituted models of objects (benches, tables, etc.) of Filipino style.

Beginning with the first exercise, which consisted merely of a piece of thin flat wood dressed to size, the pupil first made a copy of the working drawing furnished him as a model. This copy was not made the same size as the model drawing, but was drawn *to scale* (i. e., with all its dimensions proportionate to those of the model drawing). The drawings bore specifications for size of finished piece of work. A few pairs of cheap compasses and rulers were all the drawing instruments possessed by the school, and the work produced was better than one might expect, considering the tools used.

After completing drawing the pupil dressed down a piece of wood to the required thickness, laid out the dimensions of the exercise upon it, and dressed it to line. The tools used were the ordinary saws, planes, and chisels used by the native carpenters. They were purchased in Santa Cruz, Laguna, and a set of these tools is a part of the exhibit.

A definite degree of accuracy was required in each exercise, the requirement increasing as the pupil progressed. Failures were made over, the pupil learning that each operation must be mastered. As a consequence the pupils made the later and harder exercises without much difficulty. The work room was placed on the ground floor of the High School building, and the entire cost of equipment, including benches, tools, and instruments, was within ₱600. (While this is a small sum, when results are considered, yet the same outlay would provide an American school in the States with a modern and satisfactory manual-training equipment consisting of individual work benches and tools for a class of twenty pupils. The estimated cost in America for a satisfactory equipment for bench work in wood is about $15 per pupil.)

All the boys of the school take the work and enjoy it, and their average progress is most encouraging. The boys work in sections of from fifteen to twenty in daily periods of forty minutes. The Filipino teacher has learned the pedagogic value of the graded exercises, and the classes have learned to appreciate the satisfaction in work well done. The influence of the work on the school in general has been good, and it does not seem to detract from the interest in other classes in any way. A class in needlework and embroidery has recently been started for the girls. This is in charge of a competent Filipina woman teacher, and the quality of work sent with the exhibit is good.

In the woodworking department at present the pupils are obliged to dress down the rough stock for all their exercises by hand from heavy lumber. This is unfortunate, as it consumes a great deal of the pupils' time in class and involves many repetitions of the same operation, which should be avoided in manual-training work. The contemplated addition of a foot-power circular saw to their equipment will solve this problem to a large extent. With better tools and more accurate drawing instruments, requirements can be raised and better work can be done.

MINDANAO.

Of the 393 exhibits received from Mindanao, 339 are industrial exhibits from the Moro Industrial School. This school was started in Zamboanga early in 1902, being now about two years old. In opening this school the plan was to begin by teaching the Moro children the useful arts of their own people. Two American teachers (a man and a woman) with two Moro assistants (a man and a woman) constituted the teaching corps. The pupils, from 6 to 20 years of age, probably represented as raw material as were ever gathered together for instruction—at least so it seemed to the writer when he visited the school a few months after it was opened. Understanding the conditions, one must wonder at the large and excellent exhibit this school has prepared.

The pupils have been taught sewing, embroidery, cloth weaving, weaving of petates (mats) from various fibers (such as Pandan, Sinabatan, Buri, and Nito), dyeing, hat making, beadwork, and wood carving. The school has drawn upon the department to a very small extent for support, receiving little except teachers' salaries and rent of building. At the beginning of the school the enthusiasm of the American teachers led them to contribute the salaries of the Moro assistants from their own in order that the opening of the school need not be delayed.

The exhibit consist of objects used by Moros, as hats, Moro cloth, turbans, articles of clothing, bamboo musical instruments, baskets, and mats, and of objects used by Americans, as embroidered doilies, table covers, mats, hammocks, cushions, beadwork, purses, chains, etc. Both of these classes of work find a ready market in Zamboanga. The Moro articles retain, as curios, the individuality and style that characterizes the work of the race, while the work of more civilized design is from patterns selected and explained by the American teachers. Many of the embroidery patterns are from the Japanese. After the cost of material has been deducted the purchase price of each article when sold is paid to the pupil who made it.

Practically all the work shown in their large exhibit was done by pupils who, on entering the school, had received no training of any kind. Many young boys and girls who have been in the school a year or more can now earn more than their fathers. Some instruction in English and primary branches is given in connection with the industrial work, but the chief aim of the school is to develop and improve the typical handiwork of the Moros and to introduce new lines of work. The success of the school is the result of the devoted and intelligent work of the instructors. While the plan of work would not be suitable for the average Philippine school, yet any school that incorporates an industrial department in its plan may well imitate the underlying principle of the Moro school, which is, to teach the pupils to do something useful, doing it well, with hands and head.

NAUTICAL AND TRADE SCHOOLS.

Owing to the special functions of these schools, a study of their exhibits shows few features adapted to the needs of the regular primary and secondary schools. The fact that the pupils of the Nautical School have made successful progress in mathematics, up to and including spherical trigonometry, may offer some encouragement to the teachers who are initiating elementary classes into the mysteries and difficulties of beginning arithmetic.

CAVITE.

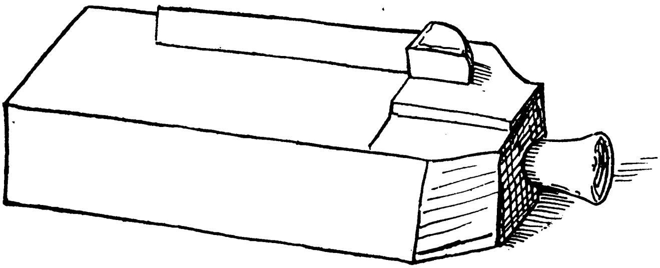
Of the total number of exhibits (271) from this province, the pueblo of Rosario sent 188. Of these 56 were industrial. These include a collection of models of various familiar objects, agricultural implements, etc., similar to the exhibits of many other schools, and an interesting collection of kites, including those used in kite fighting, apparatus used in various games, etc., But there are two features of special interest. One is the work of the girls of the school, who sent a number of samples of preserved fruits in glass jars. There are fourteen varieties of these, as follows:

Condol preserves (matamis na condol), corn parched and sugared (confites na mais), flowers preserved and buds of papaya (matamis na bulaclac at buco n̄g papaya), goyabano preserves (matamis na goybano), lime preserves (matamis na dayap), malin̄ga preserves (matamis na malin̄ga), orange-peel preserves (matamis na balat n̄g bueban), papaya preserves (matamis na papaya), pickles (sweet) (sweet mixed achara), 'preserved breadfruit (matamis na rimas), preserved mixed fruits (matamis na sarisari), preserved calamias (matamis na calamias), sweet potato preserves (matamis na camote).

All the samples sent are very attractive in appearance and it would seem that this branch of cookery might be made part of the work of classes in domestic science. (See Appendix B.)

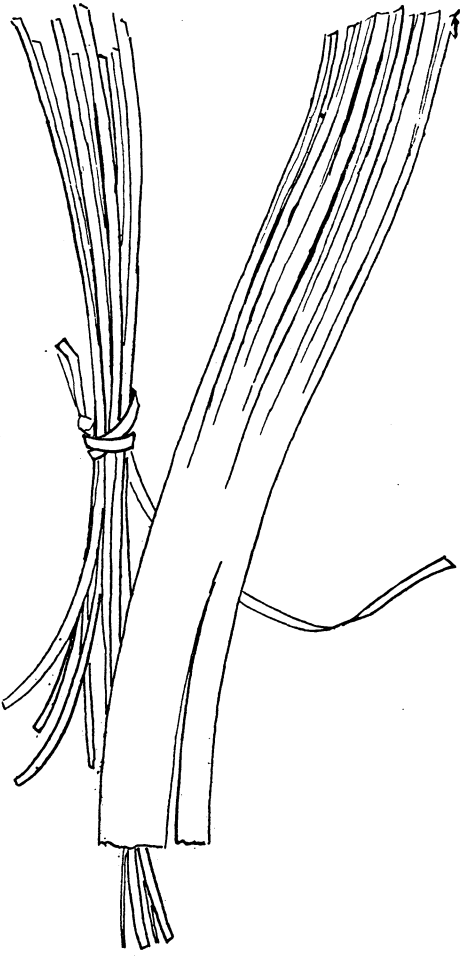
The town of Rosario is not wealthy; on the contrary, most of the people are quite poor, and yet I believe it is the only pueblo in the province that owns a schoolhouse. There are at present eight schoolhouses in the town and its barrios, all built by teachers and pupils. A few carpenters were employed to direct and instruct the pupils, who did 90 per cent of the work and received a good deal of practical industrial training in doing it. The cost of the carpenters' hire and of materials used was met by popular subcription of small amounts by the people of the town or barrio in which each schoolhouse was built. Thus almost every person in the town has subscribed a peseta or more, so each feels an interest which is personal in the schoolhouses and consequently in the schools themselves.

Processes of making a bamboo hat.

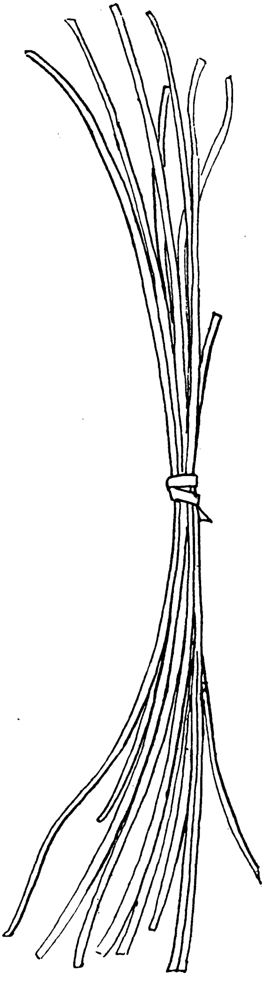


TOOL WITH MOUNTED KNIFE BLADE USED IN PREPARING BAMBOO FOR HAT WEAVING.

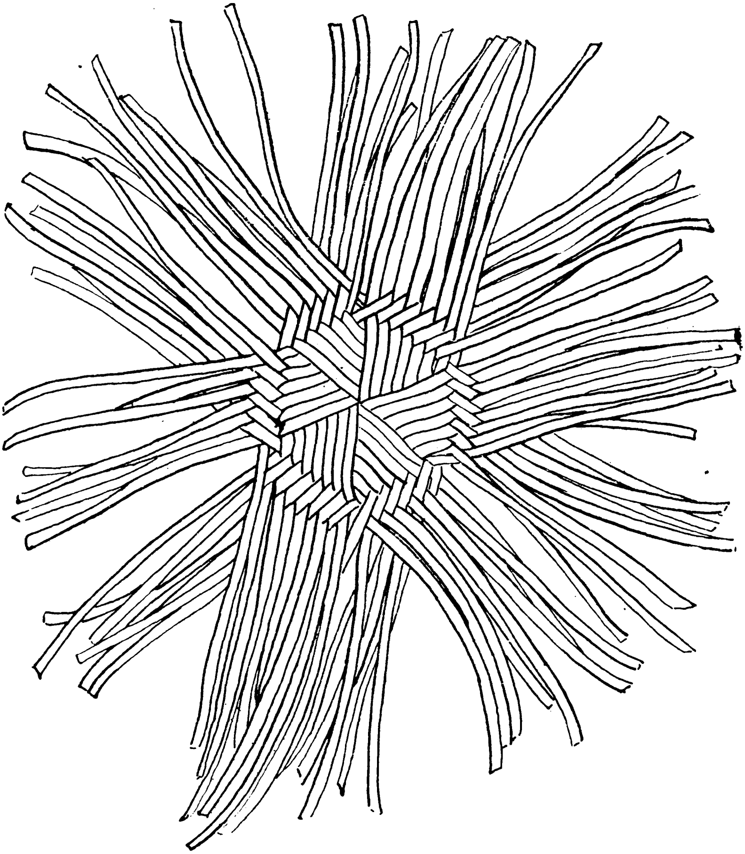
SLICE OF BAMBOO, FIRST SOFTENED WITH HOT WATER, CUT WITH TOOL SHOWN IN PRECEDING ILLUSTRATION.



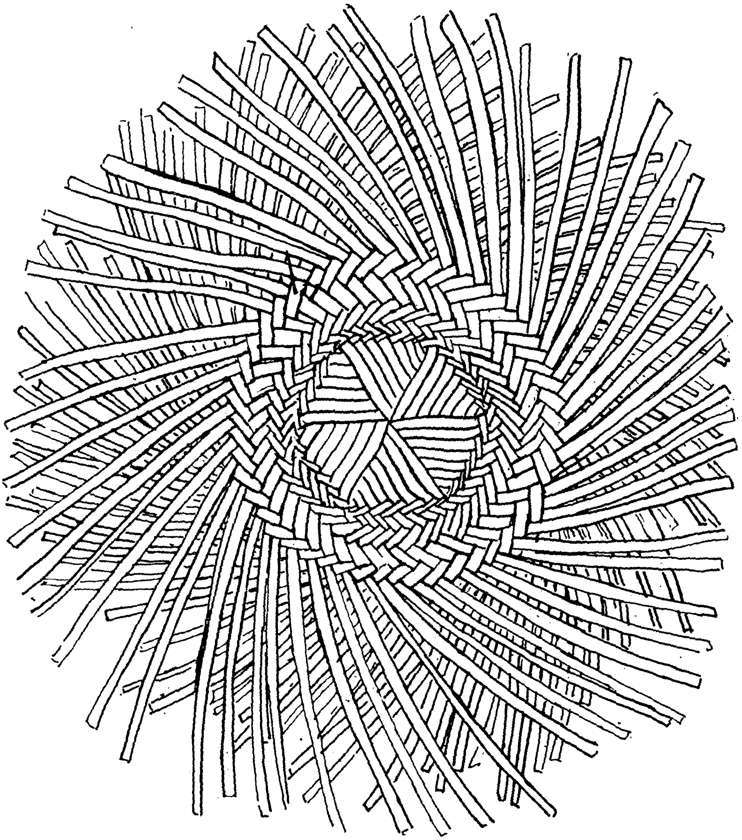
SPLIT BAMBOO READY FOR WEAVING.



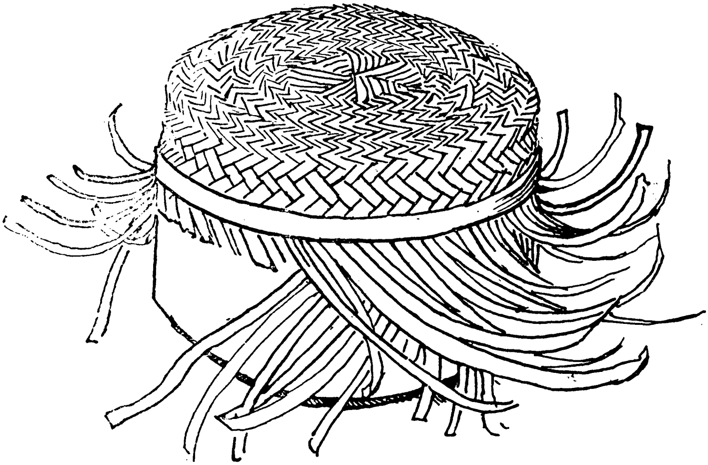
BAMBOO SPLIT FROM SLICE SHOWN ON PRECEDING PAGE.



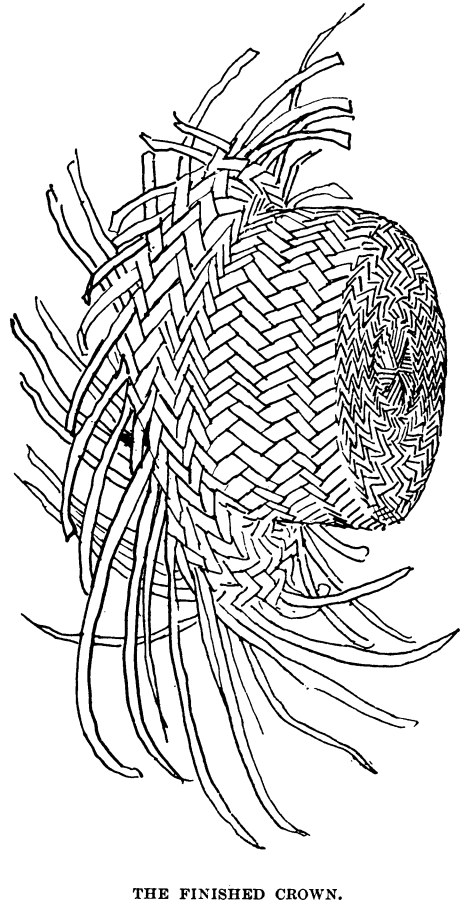
BEGINNING CENTER OF CROWN.



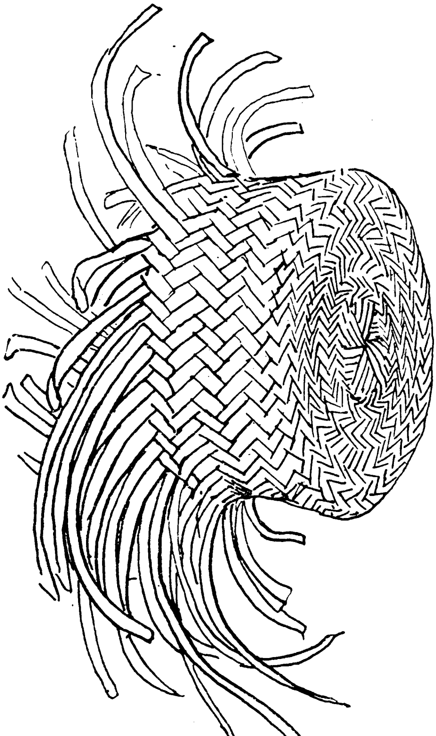
WEAVING TOP OF CROWN.



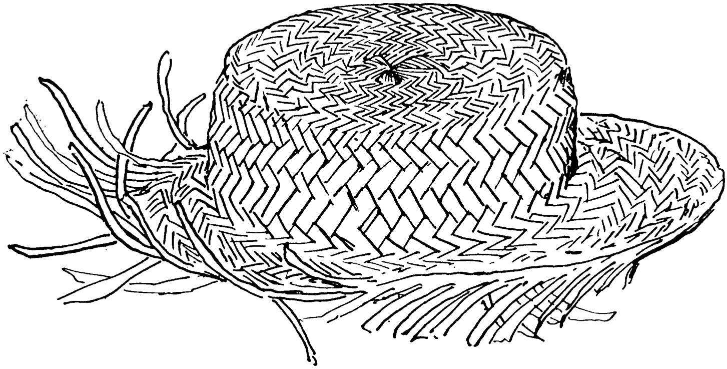
SHAPING CROWN OVER WOODEN BLOCK BOUND WITH STRIP OF RATTAN (BEJUCO).



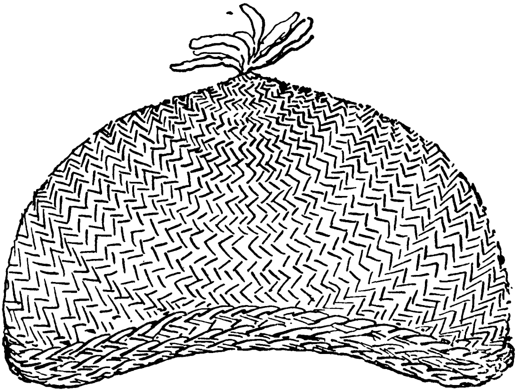
THE FINISHED CROWN.



STARTING TO WEAVE BRIM.

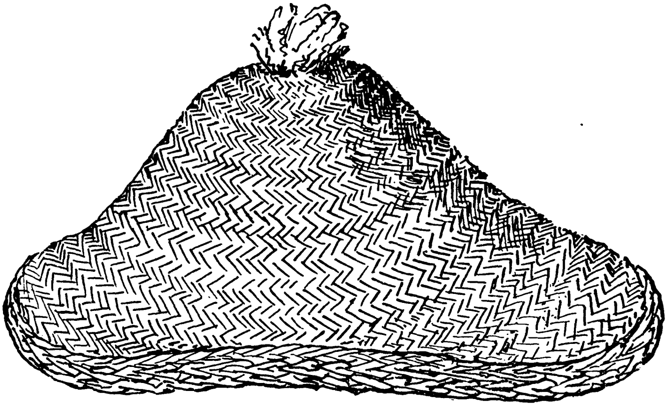


SHAPING AND EDGING BRIM.



NATIVE-STYLE HAT OF BAMBOO.

(Bread hat (Salacot na malapad) made by a pupil of Bulacan Public School.)



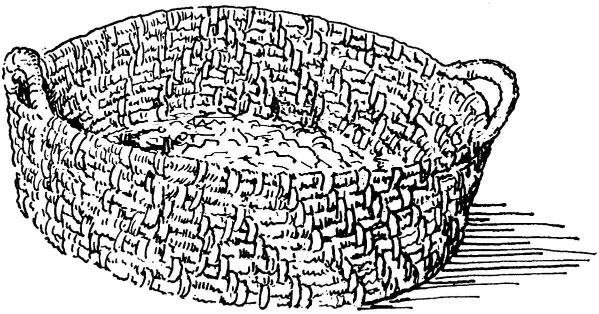
NATIVE-STYLE HAT OF BAMBOO.

(Narrow hat (Salacot na maquitid) made by a pupil of Bulacan Public School.)

The pupils of course feel the same sense of proprietorship, and the lively general interest in school affairs in the town is worth the cost of the schoolhouse many times over. The buildings are not works of art, but their bamboo frames support roofs of nipa that will keep off sun and rain, and everyone is crowded with pupils. Lessons in self-help and self-reliance are needed nowhere more than in the Philippines, and independence of this character is within reach of any pueblo that will do the work. Six large models of these school buildings have been sent with a map of the town showing their location.

BULACAN.

The primary and secondary schools of this province have sent an interesting industrial collection consisting mostly of models of implements and utensils made and used in that locality. Among the 401 exhibits from this province there are 164 industrial exhibits, 115 of which come from the pueblo of Baliuag. In the collection are several dozen small models of Baliuag hats woven by pupils. Two pupils of the high school sent hats showing the various processes involved in their manufacture. One of these, accompanied by a description in good English, shows eleven stages in the process of making a hat from bamboo fiber, and is accompanied by models of the tools used. The evolution of the completed hat from the crude bamboo is very clearly shown, the various steps being shown by models that are the work of the pupil himself. One pupil in an elementary school of Baliuag sent a shield bearing small models of the various tools and appliances used locally in agriculture, each neatly labeled with the Tagalog name. Aside from the fact that it is well done it is remarkable as being the work of a 10-year-old boy. The handiwork of the children of this province seems to be of a high order, and it might be a good field for experiment in the introduction of industries in which special skill is required of the workmen.



BASKET.

(Class exercise in manual training from the secondary school of Occidental Negros.)

BATANGAS.

The schools of this province have sent 169 industrial exhibits, in a total collection of 284 articles. The most interesting part of the exhibits comes from Lipa and is similar to the exhibits of processes mentioned in the Bulacan collection. Charts have been prepared showing the various steps in processes of abacá manufacture. These are shown on the charts by means of drawings of devices used and by samples of the fibers, showing first raw materials and drawings of the plant, then intermediate stages, dyeing, etc., with drawings of tools, and last samples of the finished fabrics. These charts are accompanied by models of the apparatus used. (See Appendix C.)

CEBU.

The collection from Cebu in one of the largest received from any division, numbering 523 exhibits. Of these 230 are industrial exhibits. The collections from Cebu and Occidental Negros show a very general interest throughout these divisions, a large number of their schools being represented by good exhibits. In the Cebu exhibit much of the written work is illustrative of local customs and industrial methods. The greater part of the industrial exhibit consists of models of agricultural implements, household utensils, pottery, etc.

OCCIDENTAL NEGROS.

This province sends 496 exhibits of which 281 are industrial. Of the latter those that are most suggestive of methods that may be adapted to the needs of other schools came from the secondary school at Bacolod. Manual training classes for both boys and girls have been started in this school so recently that the small collection of work sent is hardly more than a slight suggestion of their methods and system. The beadwork sent is similar to that now being done in American schools, and is accompanied by frames made by the pupils and used in making bead belts, chains, etc. (See Appendix E.)

PAMPANGA AND BATAAN.

This division sends a total of 262 exhibits and 86 of these are industrial. These include some interesting and well made models of articles of clothing from the school at Mexico. In the exhibits from Porac are some specimens showing forms of preparation of cooked rice wrapped in nipa and banana leaves and known as "Suman" and "Malagquit."

PANGASINAN.

The exhibits of this division number 443, 298 of these being industrial. Of these Dagupan contributes 182, Binmaley 89, and San Carlos 27. The exhibits show a very complete set of models of agricultural implements and household utensils. San Carlos sends some models of apparatus used in the native process of preparing indigo for market.

RIZAL.

Of the 187 exhibits from Rizal division 63 are industrial. These are models of objects of common use, apparatus used in games, traps, etc., that are better than the average, but are not in themselves superior to many other similar collections that are not mentioned in this report. But they have been used in the schools in connection with the work of teaching English in a way gives these models a special significance.

A model is brought to school by a pupil, who, before the day when his contribution is due, has prepared an oral description of it in good English. When he has given his description in class to the teacher, the class is asked to volunteer further description, and when the original contributions are exhausted the teacher's questions carry the work to completion. Apparatus for games, for example, will demand a large vocabulary for successful description. The making of the model not only furnishes the pupil with something to talk about, while at the same time he is performing an industrial exercise, but every cut of the knife and blow of the hammer is clinching his knowledge of the language, making it concrete and therefore practical.

UNION.

Of 285 exhibits Union division sends 131 that are industrial—a general exhibit of models of native implements and utensils. Special features of this collection are articles of native apparel, full size, and blankets of native manufacture.

MANILA.

The 1,777 exhibits from Manila include the work of private schools, the Nautical School, the Insular Normal, and the Trade School, as well as the city schools. The total number of exhibits from the city schools alone is 313, and 33 of these are industrial. These consist of plaster casts from clay models, some specimens of nautical knots from the Nautical School, and some small exhibits of needlework from three of the girls' schools. The Instituto de Mujeres sends some elaborate specimens of needlework in their exhibit. The Filipinó College (Colegio Filipino) sends a few specimens of clay modeling, and the Liceo contributes pieces of paper cutting and weaving, relief map modeling, and herbaria.

ILOCOS SUR AND ABRA.

Among the 326 exhibits from Ilocos Sur there were 34 industrial. All of these except a large dressed doll from Vigan were sent by Santa Maria. This school sent the largest school museum, with many exhibits illustrative of the industries of the locality. The industrial work of the pupils consists mostly of needlework and models of articles of clothing.

MASBATE.

Of the 100 exhibits from Masbate 52 are industrial. All of these latter are from San Fernando (Ticao) and consist of baskets and decorative clay modeling. As in many other exhibits the pupils in this work of modeling have followed too closely one or two designs, while if the originality of the pupil had been encouraged and developed the collection would have been more interesting.

APPENDIXES.

A. Models of implements and utensils.
B. Additional list of preserved fruits, etc.
C. Exhibits of processes for permanent museum.
D. The practical side.
E. Beadwork.

APPENDIX A.

MODELS OF IMPLEMENTS AND UTENSILS.

A large part of the industrial exhibit consists of models of agricultural implements, furniture, etc. These show the various forms of apparatus used in different parts of the Archipelago, and the visitor to the exhibit, whether familiar with local conditions or not, will find all of these interesting.

Effort should be made by the teacher, however, when such work is done, to lead pupils to improve existing models and introduce new ideas.

With improved facilities for transportation and purchase of supplies throughout the Archipelago there should be progress in the use of appliances of higher civilization. Not only the pupils in manual training but local carpenters, smiths, and other artisans can be helped by the introduction of American tools. Such things as nails, screws, hinges, wire, etc., should be in more common use, though of course it is recognized that for many purposes there will be no demand until forms of construction are changed and improved.

The home of every American teacher or other Government employee in the provinces can and should be a demonstration of the advantages of modern tools, methods, and appliances. The degree to which this will be shown will vary with the ingenuity and skill of the individual.

I found a young man, a teacher, living in Japan, who had sent for a number of catalogues of American makers of "handmade" furniture. From these he had selected models for the furnishing of his home. The work was done partly by Japanese carpenters under his direction and partly by himself, and the results that I saw were satisfactory and pleasing. Ideas for improvement of local styles of furniture may often be gleaned from such sources. If the teacher leads in such work he can set a "style" that the pupils of his industrial class will follow, and something will be accomplished for the betterment of living conditions.

APPENDIX B.

ADDITIONAL LIST OF PRESERVED FRUITS, ETC.

To the list of preserved fruits, etc., mentioned in connection with the industrial exhibits from Rosario, Cavite, the following might be added:

Santol preserves (Matamis na santol).
Guava preserves (Matamis na bayabas).
Guava jelly (Jaleang bayabas).
Santol jelly (Jaleang santol).
Banana preserves (Matamis na saguing: saba).
Plum preserves (Matamis na ciniguelas).
Nanca preserves (Matamis na langca).
Cidras preserves (Matamis na cidras).
Manga jelly (Jaleang manga).
Limoncitos preserves (Matamis na limoncitos).
Caong preserves (Matamis na caong).
Garbanzos preserves (Matamis na garbanzos).
Tamarind jelly (Jaleang tamarindo).
Ube jelly (Jaleang ube).
Soft cocoanut preserves (Matamis na macapuno).
Mango preserves (Matamis na manga).
Pineapple preserves (Matamis na piña).
Preserved "Susong Calabao" (Matamis na Susong Calabao).
Dried breadfruit (Tuyong rimas.)
Preserved tomatoes (Matamis na camatis).
Sweet cocoanut (Bocayo).
Dried sweet potatoes, (Pacumbong camote).
Preserved sweet pototoes, whole (Palubog na camote).

This suggests the preparation of a Filipino cookbook, which would be useful in domestic-science work, and which I believe has never been compiled. It should be one of the first things to be done by a supervisor of domestic science. A compilation of receipts from various districts of the Archipelago would enlarge the culinary knowledge of the people of any one locality.

As far as I know there has never been any means provided for any exchange or distribution of local recipes of this kind.

APPENDIX C.

EXHIBITS OF PROCESSES FOR PERMANENT MUSEUM.

The exhibits of industrial processes from Bulacan and Batangas suggest the desirability of making an extensive collection of such exhibits from all parts of the Archipelago. Similar exhibits, showing methods used locally in the various industries and covering in detail *every step* in the development from raw material to finished product should be made. A permament museum consisting of such exhibits would not only be of great theoretical and historical interest, but would serve to disseminate useful ideas.

Such a collection would also facilitate practical inventions, such as improvements upon existing methods, by showing conditions to be fulfilled in the making of improved machinery. I believe the work of gathering these collections and data can be done better through the Bureau of Education than in any other way.

APPENDIX D.

THE PRACTICAL SIDE.

When tools for woodworking are furnished a school the pupils should be taught to make practical use of them to obtain the greatest benefit. They should be shown that it is unworthy of them to allow the schoolhouse or schoolroom to fall into disrepair where it may be avoided by the use of a saw and hammer and a little energy.

Their pride should lead them to repair such conditions rather than to hold them aloof from manual work. The limited practical ability of the pupils will not usually permit great accomplishments, and these limits should not be lost sight of, but the pupils can learn many lessons of industrial training in doing this kind of work that will serve them well in practical life. Lessons, too, which the average man of the Filipino race needs, and needs badly.

If, for example, the class in manual training makes a bookcase and a plant stand for the window, the pupils will take pride in them. If such articles of furniture as they make can be decorated with carving or burnt work so much the better. But care should be taken that utility, honest solidity of construction, and graceful form of the object made should not be lost sight of nor overshadowed by the less important decorative details.

APPENDIX E.

BEADWORK.

Decorative beadwork offers good opportunities for development of original design, and is now used in many schools in America, as well as a few in the Philippines. Some work has been received in which seeds or shells were used with good effect instead of the colored glass beads. Some of the exhibits of this kind from Maao, Occidental Negros, and from the Moro Industrial School are quite attractive and similar to the work done by the Hawaiians.

In work of this kind the pupils should use the natural vari-colored seeds, beans, or shells in decorative designs. The work should be coördinate with drawing, and with originality in design the first consideration.